

REMARKS

This is in response to the Office Action that was mailed on November 2, 2006. A typographical error is corrected in the specification. Non-elected claims 1, 3, 5, 6, and 8 are cancelled, without prejudice. Claim 9 is amended based upon disclosure in paragraph [0033] of the specification (“the bottom of the constraint fixture comprises a metal plate or ring-shaped disk that has perforations in the area upon which the carbon matrix fibers are placed”). This amendment clarifies the meaning of the term “perforated” in the phrase “perforated annular ejector plate”. The feature of claim 18 is incorporated into claim 17, and accordingly claim 17 is cancelled, without prejudice. No new matter is introduced by this Amendment. No new issues are raised by this Amendment, because the amendment to claim 9 is clarificatory in nature and does not change the scope of the claim, while the amendment to claims 17 and 18 amounts to a cancellation of claim 17 (thereby obviating the anticipation rejection thereof) and the rewriting of claim 18 into independent form. Accordingly, entry of this Amendment – in order to place the application into condition for allowance or into better condition for appeal – is in order and is respectfully requested. With this amendment, claims 9, 12, and 15-17 are before the Examiner for reconsideration.

Claim 17 was rejected under 35 USC § 102(b) as being anticipated by US 5,686,117 (Snyder). Office Action, pages 2-3. This ground of rejection is obviated by the effective cancellation of claim 17 in favor of claim 18. That is, claim 17 as amended herein corresponds to former claim 18, which was not rejected as being anticipated by Snyder.

Claim 18 was rejected under 35 USC § 103(a) as being unpatentable over Snyder. Office Action, pages 6-7. The rejection is respectfully traversed.

Claim 17 (formerly claim 18) requires among other things the use of an internal area, “said internal area being defined by a perforated annular ejector plate, an inner wall, an outer wall, and a perforated annular top plate”. Regarding the perforated plates, the Examiner argues on page 3 of the Office Action that because the corresponding plates in Snyder are annular, the reference plates “have one perforation in the center”. Applicants respectfully submit that in the

context of the present disclosure (see e.g. Figures 11 and 12), it is clear that “perforated” in claim 17 means having perforations, rather than having a single perforation. In any case, the Examiner’s argument is inconsistent with the very language of the claim, which uses both the word “annular” and the word “perforated”. If “annular” meant “perforated” in the context of the present invention, there would be no reason to include the word “perforated” along with the word “annular”.

The Examiner indicates that Snyder’s “impregnation of resin” “is understood to be resin transfer molding”, and then argues, on page 7 of the Office Action, that it is obvious “to optimize the temperatures within the process”. There is a difficulty with this argument, rejection-wise. Snyder does not disclose any relevant temperatures, so there is no basis for concluding that preheating the compacted fibrous materials to a temperature between about 290°C and 425°C is “within” the prior art or that heating the mold to a temperature between about 280°F and 590°F is “within” the prior art.

Applicants respectfully submit that the Examiner has not stated a sustainable rejection of claim 17 under 35 USC § 103(a) as being unpatentable over the Snyder reference.

Claims 9, 15, and 16 were rejected under 35 USC § 103(a) as being unpatentable over Snyder in view of US 6,183,583 (Duval). Office Action, pages 4-6. Claim 12 was rejected under 35 USC § 103(a) as being unpatentable over Snyder in view of Duval and US 5,654,059 (Hecht) or GB 1,413,130 (Gilbert). Office Action, page 6. The rejections are respectfully traversed.

The present invention provides a means for moving a compacted preform directly to a resin/pitch infiltration or RTM process, without the need for a binder resin or a preliminary rigidifying step.

In discussing the present rejections on page 4 of the Office Action, the Examiner argues that Snyder discloses “annular perforated plates”. That language is not found in Snyder. As noted above, the Examiner argues on page 3 of the Office Action that because the corresponding plates in Snyder are annular, the reference plates “have one perforation in the center”. It is clear that “perforated” in the present claims means having perforations, rather than having a single

perforation. If “annular” meant “perforated” in Applicants’ claims, there would be no reason to include the word “perforated” along with the word “annular”. Moreover, in any case, the present Amendment clarifies in claim 9 that the bottom of the constraint feature is formed by “a perforated annular ejector plate that has perforations in the area upon which carbon matrix fibers are placed”. The requirement of “perforations” in the ejector plate is not satisfied by the single hole that makes the plate annular.

The present claims also require “compressing said carbon fiber materials at a pressure of about 3-10 atmospheres to form a fibrous matrix and to compact them to a density suitable for densification”. The Examiner refers to Duval, column 2, line 45 - column 3, line 10 as allegedly suggesting this feature of Applicants invention. The Duval technology is not combinable with the Snyder technology. Duval is concerned with large stacks made up of layers of felt – see Duval Figure 6A. Snyder, like the present invention, is concerned with chopped fibers – see Snyder Figure 1, noting especially reference numeral 32 therein. Persons of ordinary skill in the art are not motivated to apply the Duval felt teachings to the Snyder chopped fiber technology. Duval does little more than use the word “compressed”. There is nothing in Duval that suggests the use of 3-10 atmospheres of pressure, or any particular pressure. In the last paragraph in column 7, Duval refers to “lowering the top mold element”. There is nothing in the record to indicate that this provides any pressure above 1 atmosphere, much less that it provides a pressure of 3 atmospheres. In fact, in the same paragraph, Duval refers to the use of vacuum to achieve compression. In summary, the Duval technology is irrelevant to the technology of Snyder and the present invention, and in any case Duval simply does not suggest compression at 3-10 atmospheres.

Applicants respectfully submit that the Examiner has not stated a sustainable rejection of any of claim 9, 12, 15, or 16 under 35 USC § 103(a) as being unpatentable over Snyder in view of Duval (and Hecht).

Withdrawal of all rejections of record – and passage of this application to Issue – are respectfully requested. The Examiner is invited to telephone Richard Gallagher (Registration No. 28,781), at (703) 205-8008, with any questions concerning this application.


Application No.: 10/764,149

BSKB Docket No.: 2929-0255P
Honeywell Docket No.: H0006156-1160

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: December 29, 2006

Respectfully submitted,

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